

REMARKS

The issues outstanding in the Office Action mailed August 8, 2006, are the rejections under 35 U.S.C. 112 and 103. Reconsideration of these issues, in view of the following discussion, is respectfully requested. At the outset, the Examiner is thanked for indicating that claims 1, 17, 19, 21, 22 and 26 are allowable, and claim 18 is allowable when the rejection under § 112 is overcome. It thus appears that solely claims 25, 27 and 30 are rejected over art.

Rejections Under 35 U.S.C. 112

Claim 18 has been amended in order to correct the dependency. Thus, it is submitted that the rejection of this claim is moot, and withdrawal thereof is respectfully requested.

Claims 25, 27 and 30 have been rejected under 35 U.S.C. 112, second paragraph, as it is argued that the structural limitation "means for circulating liquid... etc." is unclear because such means "is not considered part of said device." Applicants respectfully disagree. The claim has been clarified in order to indicate that the device, comprising the chamber and means for circulating liquid and gas phases, comprises the upper and lower granular beds. It is thus submitted that the rejection is moot, and withdrawal thereof is respectfully requested. Inasmuch as claims 27 and 30 are rejected solely as a result of their dependency on claim 25, it is submitted that the rejection should be withdrawn to the extent that it pertains to these claims, as well.

Rejections Under 35 U.S.C. 103

Claims 25, 27 and 30 are rejected under 35 U.S.C. 103 over Pappas '586 taken with Billingham '877. Reconsideration of this rejection is respectfully requested.

It is again respectfully submitted that this combination of references does not suggest the above claims. Billingham teaches mixing of a liquid through a converging central opening or localized area openings, see column 3, lines 22-32 and column 4, lines 36-39. These patentees fail to suggest distribution of a polyphase mixture, e.g., through channels such as (224) *substantially over the whole section of the reactor* or substantially above the whole lower granular bed, as would be achieved by a "series" of mixture channels. Instead, Billingham separates the function of liquid mixing (through the central opening) and liquid distribution

(through lower grid (3)). Moreover, patentees avoid gas and liquid mixing inside the device by such an arrangement of features. Thus, it is maintained that, if one of ordinary skill of the art were to combine the disclosure of Billingham with that of Pappas, the result would be a replacement of downcomers (11) of Pappas by a central converging downcomer and a grid such as that (3) of Billingham, to achieve downstream liquid distribution. Such a grid would be located under the Pappas gas injection box (7) and (12) in combination with Pappas. Moreover, such a combination fails to suggest the use of the means for circulating liquid and gas phases through the granular bed or beds in a co-current descending manner. Note again that claim 21, reciting these features (which are currently recited in claim 25), was not subject to this rejection.

It is moreover respectfully submitted that one of ordinary skill in the art lacks motivation to make the combination in the manner argued in the Office Action, such motivation being *required* to support the conclusion of obviousness. See, for example, *In re Laskowski*, 871 F.2d 115, 10 USPQ2d 1397 (Fed. Cir. 1989), holding that the mere fact that a prior art structure could be readily modified to produce the claimed structure does not make the latter obvious unless the prior art suggests the desirability of doing so. Such a suggestion of desirability is lacking herein. The Office Action argues, that with respect to its reconstruction of a device from this combination of references, "so long as it takes into account only knowledge which is within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from Applicants' disclosure, such a reconstruction is proper." On its face, while this may be true, it is submitted that such analysis neglects the component of motivation, which is clearly *required* for a combination of references to be made. *Laskowski, supra*, stating that the "mere fact" that references can be combined, does not establish the obviousness to do so." Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absence in teaching, suggestion or incentive supporting the modification. See *In re Geiger*, 815 F.2d 686, 2 USPQ2d 1276 (Fed. Cir. 1987). The amount of motivation needed can be seen from the Federal Circuit's decision of *In re Jones*, 958 F.2d 347, 21 USPQ 2d 1941 (Fed. Cir. 1992). In *Jones*, patentees claimed a compound which contained a moiety which was both a primary amine and an ether. The cited reference alleged to render obvious such a primary amine/ether was one containing species which were

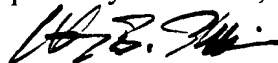
primary amines, but not ethers, and other species which were ethers, but which ethers were *cyclic*. The PTO argued that it would be obvious to one of ordinary skill in the art that the compounds could be amines and/or ethers, and to produce a compound which was both an amine and an ether. The Federal Circuit disagreed, holding that it was impermissible to select given features without the other characteristics of each compound. For example, the reference ether compounds were cyclic, this could not be ignored; the reference amine compounds that were primary amines were not ethers, this could also not be ignored. By analogy, the present Office Action argues that just the lateral orifices of Billingham would be incorporated into the apparatus of Pappas. However, this neglects the entirety of the teachings of Billingham, which are that the function of liquid mixing, through a central opening, accompanies liquid distribution through a lower grid. The relationship of the central opening and grid are discussed in the reference, for example, at column 3, in the "Objects of the Invention," where it is taught that one object of the invention is to provide uniform redistribution of liquid by using a cost effective, simply constructed baffle suspended above a distributor, which distributor causes liquid flow to converge and mix as it flows through an open space in the baffle. Such converging and mixing through an open space in the baffle is again discussed in the summary of the invention, and discussed in detail at column 4 of the application. One of ordinary skill in the art would simply not separate components, as alleged in the Office Action, in the complete absence of any motivation to extract just the grid, without the central converging downcomer.

It is accordingly respectfully maintained that a case of *prima facie* obviousness of claims 25, 27 and 30 has not been made, an withdrawal of the rejection under 35 U.S.C. 103 is respectfully requested.

All the claims are submitted to be in condition for allowance. However, if the Examiner has any questions or comments, she is cordially invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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